

ABSTRACT

There is provided a method of controlling a flow of a fluid in a microchannel, in which a part of a surface of the microchannel is a hydrophilization portion comprised of a substance being capable of decreasing a contact angle of water by irradiation of light, and the method comprises (1) irradiating the hydrophilization portion with light to decrease a contact angle of water of its surface (hydrophilization step), (2) releasing a substance for increasing a contact angle of water from a material for controlling a contact angle of water which contains the substance for increasing a contact angle of water which provides a surface having a contact angle of water larger than that of the hydrophilization portion after the decreasing of a contact angle of water (releasing step), and (3) bringing the released substance for increasing a contact angle of water into contact with the surface of the hydrophilization portion to adhere the substance for increasing a contact angle of water to the surface, thereby increasing the contact angle of water of the surface of the hydrophilization portion (hydrophobilization step). Also there is provided a valve utilizing the mentioned method. Thus, there are provided a fluid control method and valve which enable hydrophobilization and hydrophilization to be easily carried out in a noncontact manner in a microchannel without using a moving part.